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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/088,644 | 03/20/2002 | Claus Hillermeier | 32860/000282/US | 7432 |

30596 7590 05/24/2006

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| ART UNIT | PAPER NUMBER |
|---|---|
| 2123 | |

DATE MAILED: 05/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/088,644 | HILLERMEIER ET AL. | |
| | Examiner | Art Unit | |
| | Russ Guill | 2123 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *07 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 March 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to an Amendment filed March 7, 2006. Claims 1 - 43 have been examined. Claims 1 - 43 have been rejected.

2. **The Examiner would like to thank the Applicant for the well-presented response, which was useful in the examination process.**

*Response to Remarks*

3. Regarding **claim 13** rejected under 35 U.S.C. § 101:

**3.1.** The Applicant argues:

> Claim 13 is directed to statutory subject matter under 35 USC 101 because the claim is directed to "a computer program product." A claimed computer readable medium encoded with a computer program is statutory subject matter. Claim 13 recites, "a computer program product, adapted to cause a processor unit to simulate a technical system." In one example embodiment of the present invention, the "computer program product," of claim 13 may be a computer readable medium. Therefore, the computer program product of claim 13 is statutory subject matter under 35 USC 101 because claim 13 is not merely directed to a data structure or program listing, but instead is directed to a computer program product encoded with at least a "first program segment," "a second program segment," and a "third program segment."

**3.1.1.** The Examiner respectfully replies:

**3.1.1.1.** The Examiner appreciates the Applicant's argument, however, the Examiner respectfully disagrees. A broad interpretation of "computer program product" includes a simple source code listing. It is not necessary that the computer program product be a computer readable medium. The

Examiner suggests language similar to, "A computer readable medium on which are recorded executable instructions that cause a processor to execute a process . . ."

4. Regarding **claims 1, 12 and 13** rejected under 35 U.S.C. § 103:

**4.1.** The Applicant argues:

The Examiner has failed to establish a prima facie case of obviousness because MicroSim and Croix, taken singly or in combination, fail to teach or suggest the "setting constants," of claim 1, for example. The Examiner relies upon "c1val," "c2val," "r1val" and "r2val," shown on page 4-4 on MicroSim to allegedly teach the "setting constants," of claim 1. However, these variables fall under "PARAMS," which denotes parameters. Therefore, "c1val," "c2val," "r1val" and "r2val," of MicroSim are at most arguably parameters, but not the "setting constants," of claim 1. In fact, MicroSim fails to make any mention or suggestion of any "setting constants," of claim 1.

**4.1.1.** The Examiner respectfully replies:

**4.1.1.1.** The Examiner appreciates the Applicant's argument, however, the Examiner respectfully disagrees. As recited above, the label is "PARAMS," which denotes parameters, but the elements behave as settings constants because they behave as constants during a PSpice simulation.

**4.2.** The Applicant further argues:

The Examiner correctly recognizes that PSpice fails to teach or suggest "determining a result in the form of an influence of the parameters on the technical system, as a function of parameters and on the basis of a request to an external source," as set forth in claim 1. The Examiner relies upon Croix to allegedly teach these features.

Croix is directed to a method and system for creating electronic circuitry. FIG. 7 is a graph showing a response time r as a function of capacitive load at an output node 612 of characterized cell 604 and time. While this graph may have been obtained by executing a "SPICE" program, contrary to the "result," of claim 1, the graph is not generated on the "basis of a request to an external source." In fact, Croix makes no mention or suggestion of any request to an external source. Croix also fails to disclose the "setting constants," of claim 1.

**4.2.1.** The Examiner respectfully replies:

**4.2.1.1.** The Examiner appreciates the Applicant's argument, however, the Examiner respectfully disagrees. As recited in the Office Action at section 11.1.2, the art of Croix is directed to building a circuit characterization cell for use in a Spice circuit simulator (column 1, lines 1 - 65, and column 2, lines 1 - 16). In summary, Croix describes simulating a circuit at multiple values of input parameters, and storing the resulting output values along with the input parameters in a lookup table. Croix then builds a Spice cell with the lookup table for use in a Spice simulation. During Spice simulation, the cell can simply take the input values to the cell and interpolate an output value **(column 5, lines 2 - 65)**.

**4.2.1.2.** As recited above, there are actually two separate Spice executions. A first Spice execution to build a cell, and a second execution to use the cell to determine the influence of parameters on the technical system. Under the plain meaning of "external source," a cell is certainly an external source. Accordingly, the rejection is maintained.

**4.3.** The Applicant further argues regarding the new limitation in the claim, which is addressed in the rejections of the claims below.

**4.4.** The Applicant further argues:

**4.4.1.** As motivation for combining MicroSim and Croix, the Examiner alleges that "cells of the circuitry are characterized with both higher speed and higher accuracy relative to previous techniques." This argument by the Examiner is a classic "could have," combined argument: the standard however is "would have." The cited portion of Croix states the technical advantages allegedly provided by the teachings of Croix. This portion of Croix does not, however, establish why the skilled artisan would have been motivated to combine the teachings of MicroSim with Croix. In particular, the Examiner has not specified what benefits incorporating the teachings of Croix in to the system of MicroSim would provide.

**4.4.2.** The Examiner respectfully replies:

**4.4.2.1.** The ordinary artisan would have recognized the benefits of higher speed as reducing simulation time, and consequently reducing cost (time is money). Accordingly, the rejection is maintained.

**4.5.** The Applicant further argues:

**4.5.1.** MicroSim discloses a software program for circuit simulation, but fails to teach or suggest any cells of circuitry, which could be construed as similar those disclosed in Croix. The only connection between MicroSim and Croix is that the system of Croix utilizes a simulation program "SPICE" similar to the one disclosed in MicroSim. Therefore, the explicit advantages set forth in Croix would provide no additional advantage or benefit when incorporated into the system of MicroSim, and would not have motivated the skilled artisan to combine MicroSim and Croix to arrive at the claimed invention as claimed in claim 1.

**4.5.2.** The Examiner respectfully replies:

**4.5.2.1.** First, as a minor issue, MicroSim appears to disclose cells on page 1-10 under Parts Utility. Second, the important point is that Spice is a known circuit simulator in the art, and an ordinary artisan would have instantly recognized the utility of the Spice cell recited in Croix as a useful teaching for the MicroSim Spice simulator. Accordingly, the rejection is maintained.

**4.6.** The Applicant further argues:

**4.6.1.** Applicants respectfully challenge the Examiner's taking of Official Notice with regard to claims 4, 14 - 15, 25 and 36. The Examiner must provide some evidence in support of the Examiner's Official Notice or withdraw the above rejection.

**4.6.2.** The Examiner respectfully replies:

**4.6.2.1.** As support for the Official Notice of claims 4, 14 - 15, 25 and 36, please refer to the U.S. patent by Tyler, U.S. Patent Number 5,774,382, column 1, lines 20 - 45, and especially lines 26 - 30. The patent was provided as art in the previous Office Action. From the Tyler patent, it would have been obvious that redetermining the influence of parameters on the technical system by accessing a temporarily stored result was common knowledge. Accodingly, the rejections are maintained.

**4.7.** The Applicant further argues:

**4.7.1.** Rai suffers from the same deficiencies as MicroSim and Croix with regard to claims 1, 12 and 13. Therefore, the rejection should be withdrawn because a prima facie case of obviousness has not been established.

**4.7.1.1.** The Examiner respectfully replies:

4.7.1.1.1. As discussed above, MicroSim and Croix address the limitations of claims 1, 12 and 13, and therefore, Rai's alleged deficiencies regarding the claims 1, 12 and 13 are moot. Accordingly, the rejections are maintained.

*Claim Rejections - 35 USC § 101*

5. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claim 13 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The computer program product of the claim encompasses a simple listing of source code, which is non-statutory.

*Claim Rejections - 35 USC § 103*

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the

obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. **Claims 1-3, 5-7, 9-13, 16-18, 20-24, 26-28, 30-35, 37-39 and 41-43** are rejected under 35 U.S.C. 103(a) as being unpatentable over Microsim ("MicroSim Pspice A/D & Basics+", June 1997) in view of Croix (U.S. Patent No. 6,327,557), further in view of Optimizer ("MicroSim PSpice Optimizer", June 1997).

**9.1.1.** The art of Microsim is directed to the PSpice circuit simulation software (page 1-2).

**9.1.1.1.** One feature of the Spice simulator that is described in Microsim is the use of device models that have parameters (setting constants) wherein the parameters appear to be used in device model equations internal to the device model (page 1-10). Although this feature is not relied upon in this action, the internal device model equations represent results of evaluations that were stored, and then used in simulations when the device is included in a circuit. The output of the device would depend on input parameters such

as a voltage at various nodes, and setting constants such as the model parameters.

**9.1.2.** The art of Optimizer is directed to a circuit optimization program integrated with other MicroSim programs, such as MicroSim PSpice circuit simulation (**page xiv**) described above.

**9.1.3.** The art of Croix is directed to building a circuit characterization cell for use in a Spice circuit simulator (**column 1, lines 1 - 65; and column 2, lines 1 - 16**). In summary, Croix describes simulating a circuit at multiple values of input parameters, and storing the resulting output values along with the input parameters in a lookup table. Croix then builds a Spice cell with the lookup table for use in a Spice simulation. During Spice simulation, the cell can simply take the input values to the cell and interpolate an output value (**column 5, lines 2-65**). This simulation process has the advantage that cells of the circuitry are characterized with higher speed relative to previous techniques.

**9.1.4.** The art of Microsim and the art of Croix are analogous art because they are both directed to circuit simulation using the Spice simulation software.

**9.2. Regarding claim 1**:

**9.2.1.** Microsim appears to teach:

**9.2.2.** A method for simulation of a technical system (**page 1-2, section "What is Pspice A/D**), in which a function depends on parameters and on setting constants (**page 4-4, Example at the top of the page**).

**9.2.2.1.** Regarding (**page 4-4, Example at the top of the page**); it would have been obvious that the subcircuit netlist is a function that has parameters of in, out and agnd, and setting constants of c1val, c2val, r1val, r2val and gain. Also, in the line labeled EAMP1, the value of the output (V(AGND,N1)*GAIN) depends on the parameters AGND and N1 (from the function V(AGND,N1)), and the setting constant GAIN.

**9.2.3.** Determining a result in the form of an influence of the parameters on the technical system, as a function of the parameters (**page 4-4, Example at the top of the page**).

**9.2.3.1.** Regarding (**page 4-4, Example at the top of the page**); it would have been obvious that the subcircuit netlist is a function that has parameters, and produces a result that is a function of the parameters. Further, in the line labeled EAMP1, the result V(AGND,N1) is determined as a function of the parameters AGND and N1.

**9.2.4.** Temporarily storing a result (**page 4-4, Example at the top of the page**);

**9.2.4.1.** Regarding (**page 4-4, Example at the top of the page**); since the subcircuit model is processed by the SPICE simulation software in a computer, it would have been obvious that the output of the result V(AGND,N1) in the line labeled EAMP1 is temporarily stored in a computer memory.

**9.2.5.** Simulating the technical system on the basis of the result and of setting constants (**page 4-4, Example at the top of the page**);

**9.2.5.1.** Regarding (**page 4-4, Example at the top of the page**); since the subcircuit model is processed by the SPICE simulation software in a computer, it would have been obvious that the output of the result V(AGND,N1) in the line labeled EAMP1 is temporarily stored in a computer memory, then multiplied by the setting constant GAIN, and the value is used in the simulation of a technical system.

**9.2.6.** Microsim does not specifically teach:

**9.2.7.** Determining a result in the form of an influence of the parameters on the technical system, as a function of parameters and on the basis of a request to an external source.

**9.2.8.** wherein the parameters are optimized for a required function, the required function depending on the parameters for configuration or reaction of the technical system and setting constants that are static during optimization.

**9.2.9.** Croix appears to teach:

**9.2.10.** Determining a result in the form of an influence of the parameters on the technical system (**figure 7; it would have been obvious that response time is determined as a function of the parameters: input transition time and capacitive load**), as a function of parameters and on the basis of a request to an external source (**figure 7; and column 5, lines 2 – 50; and column 6, lines 44-67; and columns 7 – 8; it would have been obvious that since Spice is executed to obtain characterization values for a circuit cell using parameters, and the cell characterization values are stored for later use in a Spice circuit simulation, that the parameters are used to calculate a result on the basis of a request to an external source**).

**9.2.11.** Optimizer appears to teach:

**9.2.12.** the parameters are optimized for a required function, the required function depending on the parameters for configuration or reaction of the technical system and setting constants that are static during optimization (**pages 6-1 and 6-2, text and figure 6-1; the cited pages show an optimization for a circuit, with three parameters Rgain, Rfc and Rbw, and setting constants R1,**

R2 and R3, and required function Center frequency (Fc) that depends on the parameters).

**9.2.13.** The motivation to use the art of Croix with the art of Microsim would have been the benefits recited in Croix that cells of the circuitry are characterized with both higher speed and higher accuracy relative to previous techniques (column 2, lines 10-16).

**9.2.14.** The motivation to use the art of Optimizer with the art of MicroSim would have been the benefit recited in Optimizer that the program improves the performance of analog circuits (page xiv, first paragraph). The MicroSim reference also points to the Optimizer reference (MicroSim, pages xxvi and xxviii).

**9.2.15.** Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of Croix and the art of Optimizer with the art of Microsim to obtain the claimed invention.

**9.2.16. Regarding claim 2**:

**9.2.17.** Microsim appears to teach designing the technical system on the basis of the simulation (page 1-2, section "What is PSpice A/D?", especially "software-based breadboard of your circuit that you can use to refine your design").

**9.2.18. Regarding claims 3, 24 and 35:**

**9.2.19.** Microsim appears to teach that the design process includes a change to the technical system (**page 1-2, section "What is PSpice A/D?", especially "software-based breadboard of your circuit that you can use to *refine* your design"; it would have been obvious that refining a design is a change**).

**9.2.20. Regarding claims 5, 16, 26 and 37:**

**9.2.21.** Croix appears to teach that the influence of each of a plurality of sets of parameters on the technical system is determined by checking the external source, and wherein the result of this check is temporarily stored (**column 5, lines 7-26; and column 4, lines 47-63**).

**9.2.22. Regarding claims 6, 17, 27 and 38:**

**9.2.23.** Croix appears to teach that an additional influence is determined on the basis of temporarily stored results (**figure 7; and column 9, lines 55-67, and column 10, lines 1-35; and column 4, lines 47-63; it would have been obvious that response times are determined via interpolation of stored results**).

**9.2.24. Regarding claims 7, 18, 28 and 39:**

**9.2.25.** Croix appears to teach that the additional influence is determined by interpolation (**column 6, lines 8-21; and figure 7; and column 9, lines 55-67, and column 10, lines 1-35; and column 4, lines 47-63; it would have been obvious that response times are determined via interpolation of stored results**).

**9.2.26. Regarding claims 9, 20, 30 and 41:**

**9.2.27.** Microsim does not specifically teach that the external source is at least one of a simulator and an experiment.

**9.2.28.** Croix appears to teach that the external source is a simulator (**column 5, lines 8-27; the simulator Spice is used to calculate characterization values**).

**9.2.29. Regarding claims 10, 21, 31 and 42:**

**9.2.30.** Microsim does not specifically teach that the simulation is carried out using a plurality of results, without the external source.

**9.2.31.** Croix appears to teach that the simulation is carried out using a plurality of results, without the external source (**figure 9; and column 5, lines 8-27**).

**9.2.32. Regarding claims 11, 22, 32 and 43**:

**9.2.33.** Microsim appears to teach determining, from the simulation of the technical system, the sensitivity of sets of parameters to changes in the setting constants (**pages 12-2 and 12-3, section Parametric Analysis; and page xiii, Chapter 13 Monte Carlo and Sensitivity/Worst-Case Analyses; and page 13-33, section Sensitivity Analysis**).

**9.2.33.1.** Regarding (**pages 12-2 and 12-3, section Parametric Analysis; and page xiii, Chapter 13 Monte Carlo and Sensitivity/Worst-Case Analyses; and page 13-33, section Sensitivity Analysis**); it would have been obvious to determine, from the simulation of the technical system, the sensitivity of sets of parameters to changes in the setting constants.

**9.2.34. Regarding claim 12**:

**9.2.35.** Microsim appears to teach:

**9.2.36.** an arrangement for simulation of a technical system (**page 1-2, section "What is PSpice A/D"**).

**9.2.37.** A processor unit wherein, a function depends on parameters and setting constants (**page 4-4, Example at the top of the page**), wherein the processor unit is adapted to determine a result in the form of an influence of the parameters on the technical system as a function of a set of parameters (**page 4-4, Example at the top of the page**).

**9.2.37.1.** Regarding (**page 4-4, Example at the top of the page**); it would have been obvious that the subcircuit netlist is a function that has parameters of in, out and agnd, and setting constants of c1val, c2val, r1val, r2val and gain, and determines a result in the form of an influence of the parameters on the technical system as a function of a set of parameters. It also would have been obvious that a processor unit is used, since Spice simulations are executed on a computer. Further, in the line labeled EAMP1, the result V(AGND,N1) is determined as a function of a set of parameters. The result V(AGND,N1) is then multiplied by a setting constant, gain.

**9.2.38.** A memory, adapted to temporarily store a result (**page 4-4, Example at the top of the page**);

**9.2.38.1.** Regarding (**page 4-4, Example at the top of the page**); since the subcircuit model is processed by the SPICE simulation software in a computer, it would have been obvious that the output of the subcircuit is

temporarily stored in a computer memory. Also, it would have been obvious that the result V(AGND,N1) is temporarily stored in a computer memory.

**9.2.39.** A processor unit is adapted to simulate the technical system on the basis of a result and of the setting constants (**page 4-4, Example at the top of the page**).

**9.2.39.1.** Regarding (**page 4-4, Example at the top of the page**); in the subcircuit model, a simulation is provided based on a result (for example, the voltage between the nodes AGND and N1 in the line labeled EAMP1), and setting constants (for example, gain in the line labeled EAMP1).

**9.2.40.** Microsim does not specifically teach:

**9.2.41.** Determining a result in the form of an influence of the parameters on the technical system, as a function of parameters and on the basis of a request to an external source.

**9.2.42.** the parameters are optimized for a required function, the required function depending on the parameters for configuration or reaction of the technical system and setting constants that are static during optimization

**9.2.43.** Croix appears to teach:

**9.2.44.** Determining a result in the form of an influence of the parameters on the technical system (**figure 7; it would have been obvious that response time is determined as a function of the parameters: input transition time and**

capacitive load), as a function of parameters and on the basis of a request to an external source (figure 7; and column 5, lines 2 - 50; and column 6, lines 44-67; and columns 7 - 8; it would have been obvious that since Spice is executed to obtain characterization values for a circuit cell from input parameters, and the cell characterization values are stored for later use in a Spice circuit simulation, that the parameters are used to calculate a result on the basis of a request to an external source)

**9.2.45.** Optimizer appears to teach:

**9.2.46.** the parameters are optimized for a required function, the required function depending on the parameters for configuration or reaction of the technical system and setting constants that are static during optimization (pages 6-1 and 6-2, text and figure 6-1; the cited pages show an optimization for a circuit, with three parameters Rgain, Rfc and Rbw, and setting constants R1, R2 and R3, and required function Center frequency (Fc) that depends on the parameters).

**9.2.47.** The motivation to use the art of Croix with the art of Microsim would have been the benefits recited in Croix that cells of the circuitry are characterized with both higher speed and higher accuracy relative to previous techniques (column 2, lines 10-16).

**9.2.48.** The motivation to use the art of Optimizer with the art of MicroSim would have been the benefit recited in Optimizer that the program improves the performance of analog circuits (**page xiv, first paragraph**). The MicroSim reference also points to the Optimizer reference (**MicroSim, pages xxvi and xxviii**).

**9.2.49.** Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of Croix and the art of Optimizer with the art of Microsim to obtain the claimed invention.

**9.2.50. Regarding claim 13:**

**9.2.51.** A computer program product, adapted to cause a processor unit to simulate a technical system (**page 1-2, section "What is Pspice A/D**), wherein a function depends on parameters and setting constants (**page 4-4, Example at the top of the page**).

**9.2.52.** A first program segment, adapted to cause the processor unit to determine a result, in the form of an influence of the parameters on the technical system, as a function of a set of parameters (**page 4-4, Example at the top of the page**).

**9.2.52.1.** Regarding (**page 4-4, Example at the top of the page**); it would have been obvious that the subcircuit netlist is a function that has parameters

of in, out and agnd, and setting constants of c1val, c2val, r1val, r2val and gain, and determines a result in the form of an influence of the parameters on the technical system as a function of a set of parameters. Further, in the line labeled EAMP1, the result V(AGND,N1) is determined as a function of a set of parameters.

**9.2.53.** A second program segment, adapted to cause the processor unit to cause the result to be temporarily stored (**page 4-4, Example at the top of the page**).

**9.2.53.1.** Regarding (**page 4-4, Example at the top of the page**); since the subcircuit model is processed by the SPICE simulation software in a computer, it would have been obvious that the output of the subcircuit is temporarily stored in a computer memory. Also, it would have been obvious that the result V(AGND,N1) is temporarily stored in a computer memory.

**9.2.54.** a third program segment, adapted to cause a processor unit to simulate the technical system on the basis of the result and of the setting constants (**page 4-4, Example at the top of the page**).

**9.2.54.1.** Regarding (**page 4-4, Example at the top of the page**); in the subcircuit model, a simulation is provided based on a result (for example, the voltage between the nodes AGND and N1 in the line labeled EAMP1;

V(AGND,N1)), and setting constants (for example, gain in the line labeled EAMP1).

**9.2.55.** Microsim does not specifically teach:

**9.2.56.** a first program segment, adapted to cause the processor unit to determine a result, in the form of an influence of the parameters on the technical system, as a function of parameters ***and on the basis of a request to an external source***.

**9.2.57.** the parameters are optimized for a required function, the required function depending on the parameters for configuration or reaction of the technical system and setting constants that are static during optimization

**9.2.58.** Croix appears to teach:

**9.2.59.** a program segment, adapted to cause the processor unit to determine a result, in the form of an influence of the parameters on the technical system **(figure 7; it would have been obvious that response time is determined as a function of the parameters: input transition time and capacitive load)**, as a function of parameters and on the basis of a request to an external source **(figure 7; and column 5, lines 2 - 50; and column 6, lines 44-67; and columns 7 - 8; it would have been obvious that since Spice is executed to obtain characterization values for a circuit cell, and the cell characterization values are**

**stored for later use in a Spice circuit simulation, that the parameters are used to calculate a result on the basis of a request to an external source**).

**9.2.60.** Optimizer appears to teach:

**9.2.61.** the parameters are optimized for a required function, the required function depending on the parameters for configuration or reaction of the technical system and setting constants that are static during optimization (**pages 6-1 and 6-2, text and figure 6-1; the cited pages show an optimization for a circuit, with three parameters Rgain, Rfc and Rbw, and setting constants R1, R2 and R3, and required function Center frequency (Fc) that depends on the parameters**).

**9.2.62.** The motivation to use the art of Croix with the art of Microsim would have been the benefits recited in Croix that cells of the circuitry are characterized with both higher speed and higher accuracy relative to previous techniques (**column 2, lines 10-16**).

**9.2.63.** The motivation to use the art of Optimizer with the art of MicroSim would have been the benefit recited in Optimizer that the program improves the performance of analog circuits (**page xiv, first paragraph**). The MicroSim reference also points to the Optimizer reference (**MicroSim, pages xxvi and xxviii**).

**9.2.64.** Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of Croix and the art of Optimizer with the art of Microsim to obtain the claimed invention.

**9.2.65. Regarding claims 23 and 34**:

**9.2.66.** Microsim appears to teach that a processor unit is further adapted to design the technical system on the basis of the simulation (**page xxvi, the unlabeled figure at the bottom of the page, the MicroSim PSpice Optimizer is shown as modifying the MicroSim PspiceA/D simulator; it would have been obvious that the optimizer is adjusting values of a technical system, which is performing design; and page xxviii, MicroSim PSpice Optimizer User Guide paragraph**).

**9.2.67. Regarding claim 33**:

**9.2.68.** Microsim appears to teach a computer program product including a computer readable medium (**page xxxiii, MicroSim's evaluation CD-ROM**).

**9.3.** **Claims 4, 14-15, 25 and 36** are rejected under 35 U.S.C. 103(a) as being unpatentable over Microsim ("MicroSim Pspice A/D & Basics+", June 1997) in view of Croix (U.S. Patent 6,327,557) further in view of Optimizer as applied to claims **1-3, 5-7, 9-13, 16-18, 20-24, 26-28, 30-35, 37-39 and 41-43** above, and further in view of common knowledge in the art.

**9.3.1.** Microsim as modified by Croix and Optimizer teaches a method for simulation of a technical system, as recited in claims **1-3, 5-7, 9-13, 16-18, 20-24, 26-28, 30-35, 37-39 and 41-43** above.

**9.3.2.** **Regarding claims 4, 14, 15, 25 and 36**:

**9.3.3.** Microsim does not specifically teach redetermining the influence of the parameters on the technical system by accessing the temporarily stored result.

**9.3.4.** Official Notice is taken that it was old and well known in the art at the time of invention to temporarily store a result for reuse. The motivation would have been the knowledge of the ordinary artisan that saving a result for later reuse saves the computing expense of re-computing a result.

**9.3.5.** Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the common knowledge in the art with the art of Microsim as modified by Croix and Optimizer to obtain the claimed invention.

**9.4.** **Claims 8, 19, 29 and 40** are rejected under 35 U.S.C. 103(a) as being unpatentable over Microsim ("MicroSim Pspice A/D & Basics+", June 1997) in view of Croix (U.S. Patent 6,327,557) further in view of Optimizer as applied to **claims 1-3, 5-7, 9-13, 16-18, 20-24, 26-28, 30-35, 37-39 and 41-43** above, and further in view of Rai (U.S. Patent Number 6,606,612).

**9.4.1.** Microsim as modified by Croix and Optimizer teaches a method for simulation of a technical system, as recited in **claims 1-3, 5-7, 9-13, 16-18, 20-24, 26-28, 30-35, 37-39 and 41-43** above.

**9.4.2.** **Regarding claims 8, 19, 29 and 40**:

**9.4.3.** Microsim does not specifically teach that an additional influence is determined from the results using an neural network.

**9.4.4.** Rai appears to teach determining an influence from results using an neural network (***column 2, lines 50-55***).

**9.4.5.** The motivation to use the art of Rai with the art of Microsim as modified by Croix and Optimizer would have been the benefit recited in Rai that significant cost savings have been realized by using neural nets to interpolate between measurements (***column 2, lines 50-55***).

**9.4.6.** Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of Rai with the art of Microsim as modified by Croix and Optimizer to produce the claimed invention.

**9.5. Examiner's Note:** Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

***Conclusion***

**10.** Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

**11.** A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

**12.** Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell L. Guill whose telephone number is 571-272-7955. The examiner can normally be reached on Monday - Friday 10:00 AM - 6:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Any inquiry of a general nature or relating to the status of this application should be directed to the TC2100 Group Receptionist: 571-272-2100.

**13.** Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Russ Guill
Examiner
Art Unit 2123

Paul L. Rodriguez 5/10/06
Primary Examiner
Art Unit 2125

RG